

**Request to Archive  
With The National Centers for Environmental Information  
For Extended Reconstructed Sea Surface Temperature (ERSST), Version 4  
Provided by National Climatic Data Center**

**2014-04-15**

This information will be used by NCEI to conduct an appraisal and make a decision on the request.

**1. Who is the primary point of contact for this request?**

Huang Boyin  
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**2. Name the organization or group responsible for creating the dataset.**

NCDC GCAD IAB

**3. Provide an overview summarizing the scope of data you want to archive. Describe the outputs, data variables, including their measurement resolution and coverage.**

The monthly Extended Reconstructed Sea Surface Temperature (ERSST) dataset, available on  $2^{\circ} \times 2^{\circ}$  grids has been revised herein to version 4 (v4) from v3b. Major revisions include: updated and substantively more complete input data from the International Comprehensive Ocean Atmosphere Data Set (ICOADS) Release 2.5 (R2.5); revised Empirical Orthogonal Teleconnections (EOTs) and EOT acceptance criterion; updated sea surface temperature (SST) quality control procedures; revised SST anomaly (SSTA) evaluation methods; updated bias adjustments of ship SSTs using Hadley Nighttime Marine Air Temperature version 2 (HadNMAT2); and a buoy SST bias adjustment not previously made in v3b.

ERSST.v4 is generated using in situ SST data and improved statistical methods that allow stable reconstruction using sparse data. The monthly analysis extends from January 1875 to the present. The starting year of 1875 is based on more reliable observations after 1875. ERSST is suitable for long-term global and basin wide studies; local and short-term variations have been smoothed in ERSST. The dataset variable is sea surface temperature (SST) on a 2-degree global grid. The time resolution is monthly with time span from 1854 onward (updated monthly).

**4. What is the time period covered by the dataset? (YYYY-MM-DD, YYYY-MM or YYYY)**

From 1875-01  
Ongoing as continuous updates to the data record

**5. Edition or version number(s) of the dataset:**

ERSST v4xx

**6. Describe the level to which the data are processed. For example, are these unprocessed raw observations, derived parameters, quality controlled or inter-calibrated data, etc.?**

These are globally gridded and analyzed data by blending in-situ observations and satellite observations (for large-scale spatial patterns).

**7. Approximate date when the dataset was or will be released to the public:**

2014-10-20

**8. Who are the expected users of the archived data? How will the archived data be used?**

Climate research, monitoring and application community.

**9. Has the dataset undergone user evaluation and/or an independent review process? Did NCEI participate in design reviews?**

Peer-reviewed publications:

Huang, B., V. F. Banzon, E. Freeman, J. Lawrimore, W. Liu, T. C. Peterson, T. M. Smith, P. W. Thorne, S. D. Woodruff, and H.-M. Zhang, 2014: Extended Reconstructed Sea Surface Temperature version 4 (ERSST.v4), Part I. Upgrades and Intercomparisons. J. Climate, Submitted.

Liu, W., B. Huang, P. W. Thorne, V. F. Banzon, H.-M. Zhang, E. Freeman, J. Lawrimore, T. C. Peterson, T. M. Smith, and S. D. Woodruff, 2014: Extended Reconstructed of Sea Surface Temperature version 4 (ERSST.v4), part II: Uncertainty Estimation. J. Climate, in review.

**10. Describe the dataset's relationship to other archived datasets, such as earlier versions or related source data. If this is a new version, how does it improve upon the previous version(s)?**

Input for MLOST

**11. List the input datasets and ancillary information used to produce the data.**

Input Datasets: 1) International Comprehensive Ocean-Atmosphere Data Set (ICOADS) release 2.4; 2) NCEP GTS data set; 3) Hadley Centre HadISST Sea-Ice data set; 3) NCEP Sea-Ice data set.

**12. List web pages and other links that provide information on the data.**

(to be added)

**13. List the kinds of documents, metadata and code that are available for archiving. For example, data format specifications, user guides, algorithm documentation, metadata compliant with a standard such as ISO 19115, source code, platform/instrument metadata, data/process flow diagrams, etc.**

1. Huang, B., V. F. Banzon, E. Freeman, J. Lawrimore, W. Liu, T. C. Peterson, T. M. Smith, P. W. Thorne, S. D. Woodruff, and H.-M. Zhang, 2014: Extended Reconstructed Sea Surface Temperature version 4 (ERSST.v4), Part I. Upgrades and Intercomparisons. J. Climate, Submitted.

**14. Indicate the data file format(s).**

1. netCDF-3

**15. Are the data files compressed?**

No

**16. Provide details on how the files are named and how they are organized (e.g., file\_name\_pattern\_YYYYMM.tar in monthly aggregations).**

ersst\_v4\_analysis\_sYYYYMM\_eYYYYMM\_cYYYYMMDDTHHMMSS.tar

with starting, ending, and creating time stamps.

**17. Explain how to access sample data files and/or a file listing for previewing. If it is not available now, when will it be available?**

Rainband:/home/bhuang/iab\_op/ersst\_v4/data

**18. What is the total data volume to be submitted?**

**Historic Data: all historic data or data submitted as a completed collection.**

Total Data Volume: 700MB

Number of Data Files: 4

**Continuous Data: data volume rate for a continuous data production.**

Total Data Volume Rate: 50MB per Month

Data File Frequency: 1 per Month

Data Production Start: 2014-06-03

**19. Are later updates, revisions or replacement files anticipated? If so, explain the conditions for submitting these additional data to the archive.**

A future version is under development.

**20. Describe the server that will connect to the ingest server at NCEI for submitting the data.**

Physical Location: NCDC, Asheville, NC

System Name: Rainband

System Owner: RSAD

Additional Information:

**21. What are the possible methods for submitting the data to NCEI? Select all that apply.**

1. FTP PUSH

**22. Identify how you would like NCEI to distribute the data. Web access support depends on the resources available for the dataset.**

1. Direct download links

2. Advanced web services (e.g., THREDDS Catalog Service)

**23. Will there be any distribution, usage, or other restrictions that apply to the data in the archive?**

No known constraints apply to the data.

**24. Discuss the rationale for archiving the dataset and the anticipated benefits. Mention any risks associated with not archiving the dataset at NCEI.**

As an important input for MLOST, which is used for NOAA/NCDC climate monitoring products.

**25. Are the data archived at another facility or are there plans to do so? Please explain.**

No

**26. Is there an existing agreement or requirement driving this request to archive? Have you already contacted someone at NCEI?**

ERSST.v3b Submission Agreement

**27. Do you have a data management plan for your data?**

No

**28. Have funds been allocated to archive the data at NCEI?**

NCDC internal

**29. Identify the affiliated research project, its sponsor, and any project/grant ID as applicable.**

NCDC internal project

**30. Is there a desired deadline for NCEI to archive and provide access to the data?**

Archive by: 2014-07-03

Accessible by:

**31. Add any other pertinent information for this request.**

None